

Remarks

Reconsideration and reversal of the rejections expressed in the Office Action of February 16, 2005 are respectfully contended in view of the following remarks and the application as amended. The present invention relates to a method for reducing the amount of particles and residues in photomasks.

Claims 1 - 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kern or Hanson et al. (U.S. Patent No. 5,472,516, or "the '516 patent"). As previously stated, note that Applicants' invention as presently claimed defines a method for reducing the amount of particles and residues in photomasks by inter alia, providing a photomask having patterned metal layers; treating the photomask with a cleaning process; removing particles greater than about 0.2 microns while removing a minimal amount of patterned metal layers; and exercising the cleaning process on a particular photomask for a multiple number of cleaning cycles without degradation of the photomask.

Kern, in contrast, discloses cleaning of silicon wafers which are not photomasks, while the '516 patent discloses a method for cleaning wafers which are not photomasks. Neither of these cited references is relevant to cleaning of photomasks as disclosed and claimed in the present invention. Therefore, prima facie obviousness is not established.

Claims 14 - 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kern in view of Hanson et al., in combination with Lee et al. (U.S. Patent No. 6,139,993, or "the '993 patent"). Applicants respectfully contend that there is no teaching, suggestion or incentive supporting the combination of Kern or Hanson et al. with the '993 patent. As noted above, neither Kern nor Hanson et al. are relevant to the cleaning of photomasks, as disclosed and claimed in the present invention. Therefore, this rejection is overcome as well.

Claims 2, 6, 9 and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Nagamura et al. (U.S. Patent No. 6,071,376, or "the '376 patent."). The Office Action states that relative to these claims, the reference does not teach the ratio and the number of cleaning cycles as claimed.

The '376 patent relates to a method and apparatus for cleaning a photomask which removes residual agents (mainly sulfuric acid) from the surface of a photomask after a cleaning

step, improving the quality of photomask. Applicants respectfully contend that there is no teaching or suggestion in the reference that the particular ratios of ammonium hydroxide:hydrogen peroxide:water in the solution would produce enhanced results. Furthermore, based on the teachings of the '376 patent, there is no reasonable expectation of success associated with such ratios of components, as disclosed and claimed in the present invention. Thus, prima facie obviousness is not established.

Claims 1, 4-5, 7-8, 11-12 and 14-17 were rejected under 35 U.S.C. §102(b) as being anticipated by Nagamura et al. The claims as clarified overcome this rejection.

For all of the above reasons, it is respectfully contended that the solicited claims define patentable subject matter. Reconsideration and reversal of the rejections expressed in the Office Action of February 16, 2005 are respectfully submitted. The Examiner is invited to call the undersigned if any questions arise during the course of reconsideration of this matter.

Respectfully submitted,

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